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Does Conflict Shatter Trust or Does Trust Obliterate Conflict? Revisiting the Relationships Between Team Diversity, Conflict, and Trust

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This article explores the interplay between trust and conflict as antecedents of team effectiveness. In the first cross-sectional study, two alternative path models are tested in a sample of 174 teams (897 participants) with the emergent states of task conflict, relationship conflict, and trust acting as mediators between team demographic diversity (gender and nationality) on the one hand and perceived team effectiveness on the other. In one model trust is considered as an antecedent for the two types of conflict, while in the other the two types of conflict precede the emergence of trust. Although the fit indices for the model in which trust is considered the antecedent of conflict were slightly better, both models fitted the data well. The interdependence of trust and conflict was further explored in a second longitudinal study (49 teams), and the results showed that trust emerging in the initial team interaction phases is a good predictor for the emergence of both task and relationship conflict in further stages of team development.

Keywords: team variety, intrateam conflict, trust, team effectiveness

The open system perspective is widely used in understanding how teams perform specific organizational tasks and achieve desired outcomes (see for more details Cohen & Bailey, 1997; Guzzo & Dickson, 1996; and Ilgen, Hollenbeck, Johnson, & Jundt, 2005). Most of the leading models of team effectiveness (the input-process-output models; Gladstein, 1984; Hackman, 1987; McGrath, 1984), are based on this open system approach. Research in the last decades extended the original input-process-output (I-P-O) models to more general input-mediators-output-input models (I-M-O-I; see for details Ilgen et al., 2005). These models go beyond team processes and take into account other mediating factors (e.g., emergent states) in the relationship between inputs and outputs. Emergent states are interrelated team properties,

dynamic in nature resulting from the interpersonal interactions among the team members, and they are key elements next to team processes that influence team effectiveness (Curşeu, 2006; Ilgen et al., 2005; Marks, Mathieu, & Zaccaro, 2001). Although team processes received considerable attention in the literature on team effectiveness (LePine, Piccolo, Jackson, Mathieu, & Saul, 2008), there is little interest in testing comprehensive models with several emergent states as mediators between input variables (e.g., team diversity) and team effectiveness.

Two emergent states received considerable attention in the team literature, namely, trust and conflict. Trust describes the extent to which team members allow themselves to be vulnerable to each other's actions (Costa, Roe, & Tailieu, 2001; Mayer, Davis, & Schoorman, 1995). Conflict refers to disagreements and frictions among the team members generated by perceived incompatibilities or divergence in perceptions, expectations, and opinions (Fink, 1968; Pondy, 1967). These disagreements or differences can be task related (task conflict) or relationship related (relationship conflict; Jehn, 1994, 1995). The emergence of trust leads to

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better information sharing and higher synergy within teams (Costa, 2003; Costa et al., 2001); therefore, it improves team effectiveness. The impact of conflict on team effectiveness is still a matter of debate. In general, however, it is agreed that it has a negative impact on team processes and therefore is detrimental for team effectiveness. A previous meta-analysis using the distinction between task and relationship conflict showed that both types of conflict have a negative impact on team member satisfaction as well as on team performance (De Dreu & Weingart, 2003). Thus, trust and conflict are emergent states with opposite effects on team effectiveness. Two lines of reasoning can capture their interdependence. The dominant logic concerning the interplay between trust and conflict in teams is that trust will impact team effectiveness by reducing the levels of intra-team conflict (especially relationship conflict) (Peterson & Behfar, 2003; Simons & Peterson, 2000). A second stream of research suggests that conflict reduces team effectiveness by shattering trust (Langfred, 2007). A first aim of this study is to test these two seemingly opposing views on the interdependence between trust and conflict in relation to team effectiveness.

In terms of antecedents, previous studies related the emergence of trust and conflict to team diversity. It has been argued that there is a higher probability for a team member to trust similar others than dissimilar ones. Therefore, trust is more likely to emerge in homogeneous rather than in heterogeneous teams (Costa, 2003; Curşeu, 2006; Curşeu, Schalk, & Wessel, 2008). Conflict is more likely to emerge in heterogeneous than in homogeneous teams (Jehn, 1995; Jehn, Northcraft, & Neale, 1999). This applies to both types of conflict, task as well as relationship. Previous studies, however, failed to identify a recurrent pattern concerning the impact of different types of team diversity on team effectiveness. Gender and nationality diversity received considerable attention in the literature (Homan, Van Knippenberg, Van Kleef, & De Dreu, 2007; Milliken & Martins, 1996; Van Knippenberg & Schippers, 2007), and studies show that their impact on team performance is mediated by intrateam conflict (Jehn et al., 1999), the elaboration of task relevant information (Kearney & Gebert, 2009; Kooij-de Bode et al., 2008) and group cognitive complexity (Curşeu, Schrujijer, & Boroş, 2007; Curşeu,

Schalk, & Schrujijer, in press). A second aim of this study is to explore the impact of gender and nationality diversity on team effectiveness using the emergence of trust and conflict as mediating factors.

Team Diversity as an Antecedent for Trust and Conflict in Teams

The diversity-effectiveness relation received considerable attention in literature, and team diversity is the main input variable studied in the I-P-O as well as I-M-O-I models of team effectiveness (Horwitz, 2005; Ilgen et al., 2005). Nevertheless, the results concerning the effects of team heterogeneity on team performance are mixed (Milliken & Martins, 1996; Van Knippenberg & Schippers, 2007). Some scholars found support for the benefits of team heterogeneity (Jackson, 1992; Schrujijer & Mostert, 1997; Jehn et al., 1999; Pelled, Eisenhart, & Xin, 1999), while others have shown that team heterogeneity negatively influences team effectiveness (Banks & Millward, 2007; Bonner, 2004; Campion, Medsker, & Higgs, 1993; Tziner & Eden, 1985; O'Reilly, Caldwell, & Barnett, 1989; Watson, Kumar, & Michaelsen, 1993). Several attempts have been made to explain this inconsistency: new taxonomies going beyond attributes were introduced (Harrison & Klein, 2007); several moderating factors were investigated (Kearney & Gebert, 2009; Kooij-de Bode, Van Knippenberg & van Ginkel, 2008); and process views were advanced (Van Knippenberg & Schippers, 2007). The new taxonomy introduced by Harrison and Klein (2007) distinguished between *separation* (differences in beliefs, attitudes and values), *variety* (differences in functional background and type of expertise), and *disparity* (inequalities in status, power, and resource availability). Of all these types, only variety is expected to have a positive influence on the elaboration of task relevant information because it broadens the knowledge repertoire of the team and thus helps team performance (Curşeu et al., 2007; Harrison & Klein, 2007). Moreover, several moderators (e.g., leadership style, diversity supporting culture, group norms) seem to have an impact on the relationship between diversity and effectiveness and thus explain the inconsistencies in results. Finally, in the process view advanced by Van Knippenberg and Schippers

(2007), it is argued that the interplay between several processes (e.g., social categorization, information/decision-making, cooperation processes) should be taken into account when explaining the impact of a particular diversity type on team effectiveness.

In two reviews dealing with the effects of team diversity on team effectiveness (Milliken & Martins, 1996; Williams & O'Reilly, 1998), intrateam conflict was unanimously portrayed as a main consequence of team diversity. The higher the diversity within a team (especially diversity as disparity and diversity in visible attributes), the higher the probability that team members will engage in different forms of conflict (Pelled, 1996). A distinction is commonly made between task and relationship conflict (Pinkley, 1990; Jehn, 1995). Task conflict refers to the disagreements among the team members about the content of the task due to different view points, opinions, and ideas, while relationship conflict refers to interpersonal incompatibilities and frictions among the team members resulting in tension, annoyance, and animosity (Jehn, 1995). Some empirical studies have found support for the independence of these two types of conflict (Pinkley, 1990; Jehn, 1997), but some authors doubt their conceptual independence (De Dreu & Weingart, 2003).

Gender and nationality diversity were often explored as antecedents of conflict in groups. It seems that members of mixed gender or nationality groups have difficulties in surpassing the visible interpersonal differences and very often engage in interpersonal frictions and relationship conflict. Since the general tendency is to perceive members of other social categories as less trustworthy and cooperative than members of one's own social category (Tajfel, 1981), the coexistence of several social categories within the same team will trigger interpersonal frictions and fights (relationship conflict). Similar team members (regarding gender, nationality, or age) will have a tendency to interact more frequently and in a more positive fashion with each other than dissimilar team members. The tendency that similar actors develop stronger network ties has been labeled homophily in the social networks literature (Ibarra, 1992). According to interpersonal attraction theories, if team members share several characteristics (e.g., they belong to the same gender or nationality group), it is very likely that they will be

attracted to each other. As a consequence they will develop stronger interpersonal relationships and will collaborate better (Byrne, 1971; Berscheid & Walster, 1978). Similar team members are likely to share common experiences and values, and have the same expectations concerning social interactions. Therefore, their social interactions are more rewarding and desirable (Horwitz, 2005; Williams & O'Reilly, 1998). Similar team members also seem to develop very early in the team's life a shared language and manage to communicate more effectively than dissimilar team members (Wiersema & Bantel, 1992). Thus, according to the similarity-attraction hypothesis, team diversity (regarding gender and nationality) impacts team effectiveness by decreasing the quantity and quality of interpersonal relationships as well as by reducing trust and team integration (Lau & Murnighan, 1998; Milliken & Martins, 1996; Williams & O'Reilly, 1998).

The Interplay of Trust and Conflict in Teams

The empirical support for the differential impact of the two types of conflict on team performance is mixed. In a meta-analysis of 30 studies, De Dreu and Weingart (2003) reported moderate negative correlations for both task and relationship conflict with team performance. However, task conflict was less negatively related to team performance when the correlation between task and relationship conflict (otherwise rather high) was low. This result can be explained by the fact that task conflict might trigger relationship conflict, and when it does, it will be negatively associated with performance and team members' satisfaction (see for details Simons & Peterson, 2000). As mentioned by De Dreu and Weingart (2003), the correlation between the two types of conflict is low when factors like intrateam trust, psychological safety, and explicit norms that stimulate openness are present. Under these conditions, task conflict might have a positive relation with team performance. This opens up an interesting domain for further exploration, namely, understanding the factors that affect the joint dynamics of task and relationship conflict.

Trust is a key factor in preventing task conflict to evolve into relationship conflict. Simons and Peterson (2000) have shown that high task

conflict has a higher probability of degenerating into relationship conflict when the level of intra-team trust is low as compared to when the level of intra team trust is high. Peterson and Behfar (2003) replicated the results of Simons and Peterson (2000) and showed that the emergence of trust stops task conflict from evolving into relationship conflict. The argument of trust being a moderating factor in the relationship between task and relationship conflict is that the lack of trust in teams may lead team members to feel attacked while exchanging ideas; therefore, the probability that task conflict evolves in relationship frictions is higher (Peterson & Behfar, 2003; Simons & Peterson, 2000). Thus, trust has a positive impact on team effectiveness by reducing the levels of relationship conflict (trust is an antecedent of intra team conflict). This line of reasoning is the dominant logic concerning the effects of trust in organizational settings (Dirks & Ferrin, 2001; Peterson & Behfar, 2003; Simons & Peterson, 2000).

However, the argument that conflict is an antecedent for the emergence of trust also deserves attention, although only a few studies addressed the relationship in this way (Langfred, 2007; Porter & Lilly, 1996). Conflict is an emergent phenomenon in teams, and it influences the dynamics of other emergent states (Curşeu, 2006; Curşeu et al., 2008). Conflict is often associated with negative emotional experiences in teams (Jehn & Benderski, 2003), dissatisfaction (De Dreu & Weingart, 2003) and lack of commitment with teams (Giebels & Janssen, 2005), and low performance (De Dreu & Weingart, 2003). In groups experiencing high levels of relationship conflict, it is very likely

that members do not share mutual understanding and acceptance; therefore, the level of trust is expected to be low (Langfred, 2007). Therefore, it is not unreasonable to argue that conflict has a negative impact on team effectiveness because it blocks the emergence of trust.

The theoretical arguments discussed so far can be summarized in the models presented in Figure 1. The figure contains two models, the difference referring to the role of trust. In Model A trust is an antecedent for task and relationship conflict, and in Model B trust is a consequence of both task and relationship conflict. In line with the similarity-attraction hypothesis, in both models team diversity has a positive impact on conflict and a negative impact on the emergence of trust. Finally, trust, relationship, and task conflict act as mediators in the relationship between team diversity and team effectiveness. The aim of the first study is to test the two alternative models and explore the extent to which the impact of team diversity on team effectiveness is mediated by conflict and trust.

Study 1

Method

Sample. The participants, 897 students (332 women) with an average age of 20.4 years, from a Dutch university were distributed over 174 teams having 3 to 6 members. The teams were involved in two courses taught in international BA programs and data were collected over a time span of 4 years. The teams were involved in similar educational activities and classes were taught in English. They were required to

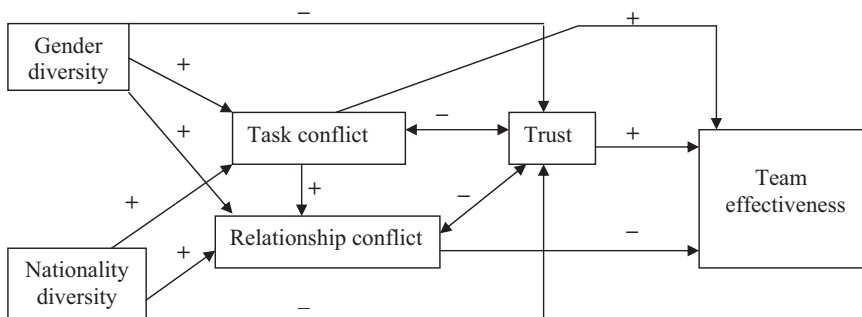


Figure 1. Overall model.

deliver a final team product (research project) covering 45% of their final grade at the end of the semester of each course. Over a 7-week period all teams participated in several team activities during class or while working on the final project. Data were collected at the end of the semester using an individual questionnaire and were aggregated into team level scores after computing a within group agreement index (Rwg index; James, Demaree, & Wolf, 1984) for each team.

Independent variables. The independent variable in this study (team diversity) was treated as a bidimensional construct: gender diversity and nationality diversity. The diversity as variety indices were computed using a formula proposed by Teachman (1980) and widely used in team diversity literature (Williams & Meân, 2004). The formula is:

$$H = - \sum_{i=1}^s P_i (\ln P_i),$$

where i represents a particular category, s is the total number of categories and P_i is the proportion of the members belonging to the i category. The theoretical maximum for H depends on the total number of categories (s) (Williams & Meân, 2004), but nationality was recoded in a dichotomous way (Dutch/non-Dutch students), therefore for both team diversity types $s = 2$. The higher the values of the H index, the higher the team's diversity. For teams consisting of only one category, $H = 0$.

The mediating variables. Trust was assessed using five items selected from a questionnaire developed by Lewis (2003) to evaluate transactive memory in teams (e.g., "I was comfortable accepting procedural suggestions from other team members" and "I was confident relying on the information that other team members brought to the discussion") and rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha for the five items was 0.75. Task conflict and relationship conflict were measured by eight items (four for task conflict and four for relationship conflict) from an intrateam conflict scale introduced by Jehn (1994, 1995). Sample items for task conflict include: "To what extent are there differences of opinions regarding the task in your team?" and "How often do people in your work

team disagree about the work being done?" and for relationship conflict: "To what extent are personality clashes present in your group?" and "How much emotional conflict is there in your work group?" The answers were recorded on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha for task conflict scale was 0.76 and for relationship conflict 0.80. These values are consistent with previous studies, which reported slightly lower coefficients for task than for relationship conflict scales (see for details Jehn, 1995; Jehn et al., 1999; Pelled et al., 1999).

Team effectiveness. Team effectiveness was evaluated using two variables: team performance and perceived team effectiveness. Team performance is operationalized as the final grade for the team research project (the maximum value is 45 as the team project covers 45% of the final grade). Perceived team effectiveness is assessed using three indicators described by Hackman (1987) in his integrative model of team effectiveness: the shared belief that the team can be effective in the future (potency), the satisfaction of the team members, and perceived performance output. In this study the data is collected from the team members; therefore, we will refer to the dependent variable as perceived team effectiveness. In the present study, team potency is assessed through three items selected from an eight-item questionnaire of potency developed by Guzzo, Yost, Campbell, and Shea (1993; e.g., "This team believes it can be very productive") and rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). For the selected three items, Cronbach's alpha was 0.78. Satisfaction with the team was assessed through six items adapted from Curşeu (2003; e.g., "I am satisfied being a member of this group") and rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*); Cronbach's alpha was 0.80. The items (three) used to assess perceived performance were selected from Curşeu (2003; e.g., "This group had visible and effective results in managing its tasks") and rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The three indicators of team effectiveness are highly intercorrelated (coefficients range from 0.46 to 0.62); therefore, we use of single indicator of team effectiveness obtained by aggregating (summing) the three scores.

To justify aggregation into group scores for the mediating and dependent variables, we used the procedure introduced by James et al. (1984) to estimate the interrater reliability (the index of agreement). The within-group agreement index (Rwg) can take values between zero and one, and generally, a value of 0.70 or higher is considered to reflect a reasonable amount of agreement within a team (James et al., 1984). To further support the aggregation we carried out an analysis of variance (ANOVA) with the individual teams as factors and trust, task conflict, relationship conflict, perceived team effectiveness as dependent variables. Because the lowest Rwg value for our sample was 0.74 and the *F* values were significant for all variables (showing that within-group variance is lower than between-group variances), we averaged individual scores into team level scores. The results of the aggregation statistics are presented in Table 1.

Results

The analyses were conducted using AMOS structural equation modeling software, version 6. We tested three models using the maximum likelihood procedure. The descriptive statistics and correlations were computed for all variables prior to running the path analyses. The results are presented in Table 2.

The first model tested was Model A with trust as an antecedent for both task and relationship conflict (see also Figure 1). This model also included the interaction term between task conflict and trust in order to see whether the results reported in Simons and Peterson (2000) and Peterson and Behfar (2003) can be replicated in our sample. The path diagram for this model is presented in Figure 2 and the standardized path coefficients are presented in the figure.

Two categories of fit indices were used in our analysis: absolute fit indices, which illustrate the general fit between the theoretical model and the data, and incremental fit indices, which compare the tested model with the null model. The null model assumes that the variables in the model are mutually independent and produces no covariance among all manifest variables (Widman & Thomson, 2003). The fit indices provide a measure of the proportional improvement of fit between the tested model and the null model. The overall chi-square shows that Model A is not significantly different from the data (Hu & Bentler, 1995, 1999), and according to the NFI, value cannot be improved significantly (Widman & Thomson, 2003). The chi-square is not significant and the value of the minimum discrepancy index is not larger than 5 (maximum value to be accepted as recommended by Marsh & Hocevar, 1985), supporting the fit between the data and the theoretical model. The root mean square error of approximation (RMSEA) is 0.0001, much lower than the 0.1 recommended for an acceptable model (Browne & Cudeck, 1993), also indicating a good fit. In relation to the null model, the incremental fit indices (TLI, CFI and NFI) show that Model A cannot be significantly improved, and they do reflect a significant increment in fit over the null model (for more technical details see Widman & Thomson, 2003). These results fully support the proposition that trust influences team effectiveness by reducing task and relationship conflict. Moreover, our study fully replicates the results reported by Simons and Peterson (2000) and Peterson and Behfar (2003) and shows that trust moderated the impact of task conflict on relationship conflict. The slopes

Table 1
Results for the Aggregation Statistics for Study 1

	Rwg Min.	Rwg Max.	Rwg Mean	Rwg SD	<i>F</i> (sig)
Trust	.75	.96	.85	.04	1.844 (.0001)
Task conflict	.76	1.00	.84	.04	3.661 (.0001)
Relationship conflict	.75	1.00	.85	.05	5.469 (.0001)
Satisfaction	.75	1.00	.85	.04	4.490 (.0001)
Potency	.76	.95	.85	.04	3.532 (.0001)
Perceived performance	.75	1.00	.80	.05	3.166 (.0001)

Table 2
Means, Standard Deviations, and Correlations for Study 1

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Team size	5.18	.92	1						
2. Gender diversity	.52	.22	.16*	1					
3. Nationality diversity	.11	.21	-.00	.06	1				
4. Task conflict	2.75	.36	-.03	.10	.20**	1			
5. Relationship conflict	1.67	.41	-.03	.07	.10	.59**	1		
6. Trust	3.86	.25	-.10	-.03	-.21**	-.32**	-.39**	1	
7. Perceived team effectiveness	11.67	1.07	.01	-.12	-.08	-.25**	-.35**	.53**	1
8. Team performance	31.04	3.89	-.08	-.06	.08	-.01	-.20**	.25**	.37**

Note. *N* = 174.

* $p < .05$. ** $p < .01$.

for the interaction effect are presented in Figure 3.

The second model tested (Model B) was based on the argument that task and relationship conflict shatter trust and thus are antecedents of (dis)trust. The path diagram for Model B is presented in Figure 4.

The fit indices fully support the validity of this model too. The lower RMSEA value obtained for Model A shows that Model A fits the data slightly better than Model B. In general the fit indices for Model B are slightly lower than for Model A, however the chi-square difference is not significant $\Delta\chi^2(4) = 1.96$ ($p < .49$), meaning that although Model A shows a slightly better fit with the data, it is not significantly better than Model B. This means that the mediator role of trust for the effect of task and relationship conflict on team effectiveness is also supported—the two types of conflict impact team effectiveness by shattering trust

within teams. The fit indices for the two models are presented in Table 3.

Discussion

One of the aims of this article was to empirically test the impact of gender and nationality diversity on team effectiveness as it is mediated by intragroup conflict and trust. It has been argued that gender and nationality diversity impact on team effectiveness by increasing conflict and reducing trust. These propositions were only partially supported by the data. Nationality has a negative impact on trust and thus an indirect negative impact on perceived team effectiveness. The negative indirect impact of gender diversity on perceived team effectiveness or team performance is not significant. Both nationality and gender diversity, however, have an indirect positive effect on team performance, mediated by task conflict. This is not

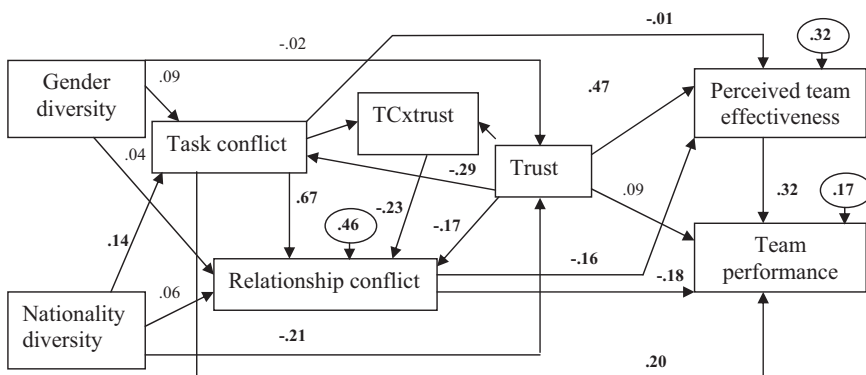


Figure 2. Path diagram and standardized path coefficients for Model A.

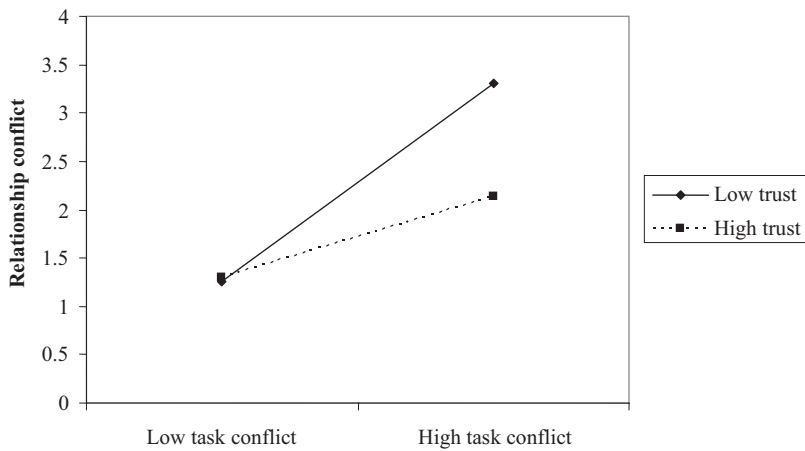


Figure 3. The effects of task conflict and trust on relationship conflict.

unreasonable since both variables are illustrative for the degree of horizontal differentiation within teams; they are both forms of variety as described by Harrison and Klein (2007). There is no reason to assume that finalizing a project is a task in which gender related power differences exist. It is, however, very likely that men and women have different contributions to the task (e.g., idea generation, different experiences with collaboration in groups, see for details Curşeu et al., 2007); therefore, gender is an attribute, which in this particular task can be conceptualized as variety. A similar argument holds true for nationality, which can also be conceptualized in this instance as horizontal differentiation.

An interesting pattern of results emerged regarding the impact of conflict and trust on the two indicators for team effectiveness. Relation-

ship conflict has a significant and negative impact on both perceived team effectiveness as well as on team performance. This result is in line with previous studies showing the general negative impact of relationship conflict on both perceived team effectiveness and team performance (De Dreu & Weingart, 2003). Trust, however, seems to only influence the perceived team effectiveness and the impact on team performance (although positive) is not significant. This result is in line with the argument that trust will impact on team performance by fostering team viability and satisfaction (Guzzo et al., 1993). Task conflict has a significant positive impact on team performance, but the impact on perceived team effectiveness is not significant. Disagreements about the task seem to be beneficial for real team performance as argued by Jehn (1995); however, they are not relevant

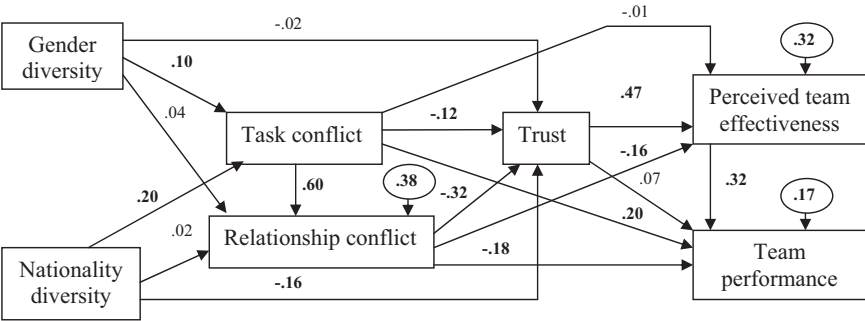


Figure 4. Path diagram and standardized path coefficients for Model B.

Table 3
Fit Indices for Path Models A and B

Model	χ^2	RMSEA	NFI	CFI	TLI	$\Delta\chi^2(4)$
A	7.79 ($df = 9, p < .55$)	.0001	1.00	1.00	1.00	1.96 ($p < .49$)
B	5.83 ($df = 5, p < .32$)	.031	.97	.99	.97	

predictors for perceived team effectiveness. Perceived team effectiveness is a tri-dimensional construct (viability, satisfaction, and perceived performance), and thus, our result is in line with previous research reporting rather small correlations of task conflict with satisfaction (De Dreu & Weingart, 2003).

The second aim of this article was to test two apparently opposing models concerning the interplay between trust and conflict as antecedents of team performance. Our data (not surprisingly) show support for both theoretical claims. As the fit indices show, both Model A and Model B are fully supported by the data and explain significantly more variance than the assumed null model. Model A seems, however, to fit the data slightly better than Model B. As shown in Model A, trust moderates the impact of task conflict on relationship conflict. Groups with high task conflict and a low level of trust experience the highest levels of relationship conflict. Next to the better fit indices of Model A, the moderation is another indication that trust is an antecedent for conflict. Our data, however, cannot be used to draw definite conclusions due to the fact that the study was cross-sectional. The dynamics of the relationship between trust and conflict in teams can be explored better in a longitudinal design, which is the aim of our second study.

Study 2

Sample and Procedure

The participants, 253 students (118 women) with an average age of 19.22, from a Dutch university were distributed over 49 teams having 3 to 6 members. Similar with the teams in Study 1, these teams were involved in similar educational activities and were required to deliver a final team product (e.g., research project) at the end of the semester. Data were collected at the end of the first week of their joint team activities (T1) and at the end of the semester (T2) using the same questionnaires described in Study 1.

Results

After computing the within-group agreement index (Rwg index, James et al., 1984), all questionnaire data were aggregated to the team level by using the mean of the individual scores. We then conducted several linear regressions to test the impact of trust, task, and relationship conflict measured in Time 1 on trust, task, and relationship conflict measured in Time 2. Means, standard deviations, and correlations are presented in Table 4. Relationship conflict at Time 2 was on the one hand positively correlated with task and relationship conflict at

Table 4
Means, Standard Deviations, and Correlations for Study 2

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Team size	4.95	1.15						
2. TR – Time 1	3.82	.26	-.02					
3. TC – Time 1	2.64	.34	.21	-.23				
4. RC – Time 1	1.50	.31	-.36**	-.30*	.39**			
5. TR – Time 2	3.91	.18	-.02	.59**	-.27	-.19		
6. TC – Time 2	2.85	.48	.45**	-.39**	.57**	.02	-.38**	
7. RC – Time 2	1.64	.35	-.09	-.38**	.42**	.57**	-.32*	.35*

Note. $N = 49$. TR = trust; TC = task conflict; RC = relationship conflict.

* $p < .05$. ** $p < .01$.

Time 1 as well as with task conflict at Time 2 and on the other hand negatively correlated with trust measured both at Time 1 and Time 2.

In order to further explore whether trust predicts conflict or conflict predicts the emergence of trust, we performed three linear regression analyses with trust, task, and relationship conflict as evaluated at Time 1 as independent variables and trust, task, and relationship conflict as evaluated at Time 2 as dependent variables. The results are presented in Table 5.

Our results show that the emergence of trust at Time 1 negatively predicts the emergence of task and relationship conflict at Time 2. Trust at Time 2, however, is only predicted by trust at Time 1, and task and relationship conflict at Time 1 are not significant predictors of Trust at Time 2.

General Discussion

This study makes a number of important contributions to the literature on emergent states in teams. By taking an IMOI stance on team dynamics, the article argues that the impact of team diversity on team effectiveness is mediated by two emergent states: trust and intrateam conflict. We tested in a cross-sectional study, the extent to which the impact of two forms of diversity, (gender and nationality) on team effectiveness is mediated by trust and task conflict. We tested two alternative models exploring the interplay between trust and conflict in teams. In the first model, trust was conceptualized as an antecedent for intrateam conflict, and in the second, task and relationship conflict were conceptualized as antecedents of trust. Consistent with previous meta-analytic research (De Dreu & Weingart, 2003), our study shows that relationship conflict has a negative impact

on team effectiveness. Also, in line with previous research on trust (Langfred, 2007; Peterson & Behfar, 2003), our study shows a strong impact of trust on perceived team effectiveness. In line with the results reported by Peterson and Behfar (2003) and Simons and Peterson (2000), we show in our cross-sectional study that trust moderates the impact of task conflict on relationship conflict in such a way that the highest levels of relationship conflict are experienced in groups with low trust and high task conflict. Finally, our longitudinal study shows that trust emerging in the first stages of team interaction is likely to reduce the intrateam conflict in the later stages. Taken together, these results support the idea that (dis)trust is an antecedent of conflict in teams and not the other way around. Results from computational experiments (agent-based simulations) seem to support this argument. In a simulation study Prietula and Carley (2000) showed that emergent trust in an agent-based simulation generates durable information coalitions among the agents, and it reduces the information withheld as well as the level of conflict.

As theoretically argued as argued by Harrison and Klein (2007), trust and conflict are found to mediate the impact of team diversity on team effectiveness. Nationality diversity has a negative indirect effect on perceived team effectiveness (mediated by trust) and an indirect positive effect on team performance (mediated by task conflict). A similar pattern of results is obtained for gender diversity, yet the effects are not significant. We can argue that the two forms of diversity foster distrust and relationship conflict, but at the same time are beneficial for group cognitive complexity and foster task conflict. These results are in line with the theoretical arguments advanced by the similarity-

Table 5

Results of Regression Analyses for the Effects of Conflict Types and Trust at Time 1 on Conflict Types and Trust at Time 2

	RC Time 2	TC Time 2	TR Time 2
Trust (TR) Time 1	-.20*	-.35***	.56***
Task conflict (TC) Time 1	.20*	.61***	-.15
Relationship conflict (RC) Time 1	.42***	-.33***	.03
AdjR	.37	.45	.32
F	10.4***	14.19***	8.85***

Note. $N = 49$. Standardized regression coefficients are reported in the table.

* $p < .10$. ** $p < .05$. *** $p < .01$.

attraction hypothesis and the information processing/decision-making processes in teams (Homan et al., 2007; Van Knippenberg & Schippers, 2007).

Our measure for team performance is somehow related to the concept of cognitive complexity (Curşeu et al., 2007), in that groups reporting in their research projects a more complex understanding of the course domain receive higher grades. Using gender as an indicator for variety and a measure of cognitive complexity as an indicator for performance, Curşeu et al. (2007) and Curşeu, Schalk, and Schrujier (in press) show gender variety to be positively related to group cognitive complexity and performance. Gender and nationality diversity seem to broaden the range of task relevant experience, and possibly increase the range of external network ties of the team (Kearney & Gebert, 2009). Thus, they are beneficial for group cognitive complexity. The positive impact of gender and nationality diversity on team performance could be, for example, mediated by the degree of elaboration for the task relevant information as argued in several previous studies by Van Knippenberg (Van Knippenberg, De Dreu, & Homan, 2004; Van Knippenberg, Haslam, & Platow, 2007; Kooij-de Bode et al., 2008).

The two studies reported here, and especially the longitudinal study, extend research on emergent states in teams by exploring the interplay between intragroup conflict and trust in teams. Previous research on this interplay can be summarized in two main logics: one arguing that trust is an antecedent for intragroup conflict (Peterson & Behfar, 2003; Simons & Peterson, 2000) and the other arguing that intragroup conflict is the antecedent for trust (Langfred, 2007). Our empirical results strongly support the first line of reasoning. Trust emerging in the first stages of team development negatively predicts both task and relationship conflict in later stages. Our results also support previous claims that trust emerging at the beginning of team life fosters the emergence of trust later on. Trust allows for the development of strong interpersonal ties among the groups members, and it reduces the need for monitoring (Curşeu, 2006; Curşeu et al., 2008); therefore, it reduces the likelihood of task and relationship conflict in later stages. If team members trust each other, they will not feel the need to engage in discus-

sions about the way they have to perform the task, but rather tend to accept the views expressed by their colleagues without challenging them.

In conclusion, as the results of this study show, trust is an essential emergent state for team dynamics and effectiveness. Emergent trust is essential for information exchange in teams as well as the emergence of other states (e.g., conflict, team cognition, see for details Curşeu, 2006 and Curşeu et al., 2008). Either through its direct or indirect effects, trust is an essential enabler of team effectiveness. Trust influences team effectiveness directly, but it also fosters team effectiveness through its effects on other emergent states (conflict, potency).

Practical Implications

Our findings suggest that the emergence of trust is essential for the emergence of other socio-emotional states in groups as well as for team effectiveness. Managers need to pay attention to the complex and dynamic pattern of interdependencies between trust and other emergent states in teams. Already from the design stage managers and team leaders have to make sure that the emergence of trust is facilitated. In this respect, effective diversity management programs seem to be essential for the emergence of trust in teams. Clear coordination protocols, team building exercises, and the awareness of a collective goal are just a few ways in which the emergence of trust can be facilitated. Managers need to be aware that distrust will most probably enhance the probability of intragroup conflict and have to focus on helping the team members to develop skills of effectively dealing with conflict. The importance of adequate support is in particular important for the educational setting in which we have collected our data. Groups are used in educational settings to create a learning environment in which students may learn from each other and have the chance of developing team-working skills essential for their career later on. It is critical to ensure that students are coached in dealing with the destructive effects of conflicts and are trained to reap the benefits of trust.

Limitations and Future Research Directions

In our study, gender and nationality are conceptualized as variety. However, further research should take into account that disparity and variety can only be defined in relation to the task and the general context in which the team operates. An attribute used to define team variety in one situation may be illustrative for disparity in another. For example, in a stereotypical male task, gender diversity is very likely to be associated with disparity because women's contribution to the task will be disregarded. In an organization with a skewed gender distribution, gender is also very likely to be associated with disparity because of its close association with power differences in the organization. The true value of team diversity (as disparity, variety, or separation) can only be assessed by relating it to the task at hand and situating it in its proper context. Another limitation of our study is that we used student samples. This allowed for a large sample to be assembled, but it reduces the generalizability of our results. This study should be replicated in other organizational settings and using groups performing a larger variety of tasks.

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